



SCHOOL OF MEDICINE  
DEPARTMENT OF PEDIATRICS  
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February 19, 2021

Cindy Marten, Superintendent  
San Diego Unified School District

Kisha Borden, President  
San Diego Education Association

**RE: UCSD EXPERT SCIENTIFIC PANEL for COVID-19**

Dear Ms. Marten and Ms. Borden,

This report summarizes the written advice of seven UCSD experts<sup>1</sup> in various fields of expertise related to the COVID-19 pandemic, including pediatrics, infectious disease, epidemiology, public health, and atmospheric chemistry. As you know, these experts were selected by UCSD's Chancellor Pradeep Khosla and were introduced (via a video-call) to SDEA and District leaders on February 3<sup>rd</sup>. The panel was invited to respond to written questions prepared by SDEA and the District. Each panelist was asked to respond only to those questions they felt were in their field of professional expertise.

This report consists of: (i) a summary of the experts' responses to each issue, and (ii) recommendations made in my capacity as medical consultant to this district and a UCSD expert in the field of school health. The summary and my recommendations are attached.

My recommendations, and those of the UCSD experts, are a 'moment in time', insofar as they reflect present-day knowledge of how this virus is transmitted, vaccination efficacy, projected trajectory of this disease, as well as current recommendations from other entities, such as the Centers for Disease Control and Prevention, the California Department of Public Health and our local health department.

Respectfully yours,

Howard Taras, MD  
UC-San Diego Pediatrics (School Health)  
District physician, San Diego Unified School District

Appendix A: Questions for expert panel  
Appendix B: Answers from expert panel  
Appendix C: Scientific Literature review

<sup>1</sup> John Bradley, MD; Natasha Martin, DrPh; Alice Pong, MD; Kimberly Prather, PhD; Mark Sawyer, MD; Robert Schooley, MD; Stephen Spector, MD;



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**SUMMARY REPORT AND RECOMMENDATIONS; UCSD EXPERT SCIENTIFIC PANEL (COVID-19)  
For SAN DIEGO UNIFIED SCHOOL DISTRICT  
February 19, 2021**

**General comments:**

Before soliciting input from UCSD expert panelists, they were given this definition of “reopening schools” for purposes of this document: when all students are invited to be back on school campuses for at least part of each week, whether or not all take the opportunity to do so.

The UCSD expert panelists recognize the enormity of this district, and that staff and students come from all parts of the County. In addition to health hazards that could occur as result of reopening, panelists were also asked to recognize that health hazards may occur as a result of not reopening schools. Anxiety, depression, suicide ideation and other health issues are possible. If well-documented increases in the prevalence of myopia for this age group are to be believed, myopia could be a relatively benign marker of more serious consequences of students remaining largely indoors for many months. Overeating and decreased physical activity may have irreversible effects on metabolic and cardiac diseases and on subsequently longevity in coming decades. There may be long-term adverse developmental, educational, vocational, social-equity or productivity outcomes when large portions of school-age children are educated purely online for lengthy stretches of time. While direct measures of morbidity and mortality of Covid-19 are available to us now, measuring health and social consequences of not reopening is more difficult. In their responses to the District, UCSD expert panelists knew to consider these, nevertheless.

**Howard Taras, MD**

**1. Overarching Criteria for Reopening**

Per most of our UCSD expert panelists, case rates (i.e., number of positives per 100,000 population) alone should not be the predominant indicator for reopening but should instead be monitored along with other indicators. In addition to (or for a minority of panelists, instead of) monitoring case rates, the decision to reopen should be conditional on a school’s ability to establish a safe environment using multiple virus mitigating safety strategies (e.g.: populations are masked, distanced, and in well-ventilated spaces, with hand sanitizing measures). Two panelists felt that the community case rate *trend* was important, and should be either declining or stable, but not increasing, when schools reopen. Two dismissed this as a benchmark.

Case positivity rates (i.e., percent of tests positive as compared to total tests; typically measured over a 7-day period) were considered more important by some than community case rates. One mentioned the  $R_0$  as something to consider. (Note:  $R_0$  is also referred to as ‘R-naught’ or the ‘reproduction number’. It is the average number of people who will contract a contagious disease from one person with that disease).

**1. Reopening criteria. Taras’s comments/recommendations:**

Reading UCSD Expert Panel comments as well as the Centers for Disease Control and Prevention (CDC)’s “*Operational Strategy for K-12 Schools through Phased Mitigation*”, there is remarkable concordance between them with regards to reopening criteria. There is no maximum case rate beyond which the CDC would recommend against any school reopening in “hybrid mode” (i.e., having no more than half of students on campus), if a school screening testing program is implemented. If testing is not implemented, then only elementary schools can reopen and secondary schools must wait for

community case rates to fall lower than 14/100,000/day. I agree with this part of the CDC guidance, excepting for three caveats:

- (i) Research shows that schools can be community breeding grounds for this virus. Only once infection control measures are stringently implemented, can schools become as safe as elsewhere in the community, particularly for elementary schools. So strict control measures in schools must be in place. School transmission can be prevented.
- (ii) We must always operate within the regulations of our State. The CDPH's current reopening criteria (for hybrid learning) is a case rate less than 24/100,000/day. If the CDPH relaxes that number, I am not opposed to reopening at higher case rates (as per CDC) if all our infection control mitigations are in place and there is verification of compliance on all sites.
- (iii) Two members of the UCSD panel suggested that schools reopen only when case rates are relatively stable or decreasing, not increasing. Although neither public health authority regards this particular metric as a deciding factor for school reopening, and even though only two panelists mention this, my opinion is that an upward trajectory is a logical warning sign – but only if that increase is steep and trends over time. It is a nod to the  $R_0$  suggestion, as they are related. I propose the trajectory be defined as >25% increase/week in community case rates, as published by the local health department, for two consecutive weeks. (A one week increase, however large, would not constitute a trend.) If the steepness falls below a 25% increase over the course of a subsequent week, I'd recommend reverting to the more acceptable guidance of reopening schools, but with very tight mitigations and objective verification of compliance.

Criteria for school closures were not a topic presented to UCSD expert panelists for comment. But it is worth mentioning that once schools are open, community case rates themselves are not metrics that should drive schools to close. Once reopened, school-based virus transmissions that are either unexplained or not easily prevented become the primary reason to close schools. Of course, any directive made by the local public health department can also close a school.

## **2. Panelists' Reflections on California Department of Public Health Reopening Criteria (January 14, 2021)\*.**

*\*The experts did not comment on CDC Guidelines as they were not published at the time of their review.*

Benchmark case rates. The CDPH's January 2021 benchmark of <25/100,000/day before reopening elementary schools was considered somewhat arbitrary by most panelists, and dismissed by one. Case rates were not considered to be the best gauge to use for reopening. One panelist felt using case rates as a condition for onsite education could inadvertently discriminate against low-income communities experiencing higher rates of community transmission (assuming neighborhood-level case rates dictated school-by-school reopening). Two panelists did feel it was appropriate to use 25/100,000/day as a benchmark to reopen.

As for secondary schools, this state document recommends <7/100,000/day to reopen high schools for hybrid learning. (As a comparison, the CDC's benchmark for high school reopening at hybrid level is <14/100,000/day if not testing and at any case rate if testing was occurring for school community). If using case rates at all to trigger reopening, several UCSD experts felt 25/100,000/day for high schools (same as elementary schools) is acceptable as long as other mitigations are well in place and there was a downward trend. Others on this panel felt waiting for case rates to drop lower than the benchmark for elementary schools made some sense, given older youth's statistically higher chances for transmission. But even then, panelists felt secondary schools could open if they were: (a) instituting stricter cohorts (e.g., no-mixing of high school cohorts; weeklong switches for onsite/offsite); (b) increasing testing cadence/participation; and (c) there were school inspections by outside government agencies to assure adherence to mitigation strategies. One expert suggested delaying extracurricular activities and athletics in secondary schools, but allowing academics, at least until in-school transmission prevention could be documented.

Asymptomatic testing: There was a wide array of input. One panelist felt periodic testing was of value to public health officials and although it would "give confidence to teachers" is not of real help to them. Another felt it was not useful for reopening if mitigation efforts are followed. For most respondents, testing does aid in risk reduction in schools but the circumstances differed between panelists: Testing only adds value if more than 80% of onsite population is tested; Test every two weeks and make it non-mandatory; Test weekly for 2 weeks when schools first reopen followed by less

frequency; Use pooling test methods to augment low frequency testing; and Allow community case rates to determine cadence of testing.

**2. Comparison to Other Recommendations for Schools. Taras's comments/recommendations:**

Case rates in the CDC guidance use different units of measurement than those in the CDPH guidance. The CDPH uses an average daily rate whereas the CDC uses an average weekly rate. The CDC's benchmark to reopen secondary schools at 99/100,000/week translates to roughly 14/100,000/day using CDPH's method. Honoring the input from UCSD expert panelists, I recommend following CDC guidance for opening elementary schools (i.e., at any community case rate) and opening secondary schools when cases are < 100/100,000/week or < 14/100,000/day).

"Percent positivity rates" indicate how widespread infection is in a region, and whether levels of testing are keeping up with levels of disease transmission. (For percent positivity rates, the CDC and San Diego County use similar units of measurement). When high, scientists advise strengthening virus transmission mitigation measures and increasing testing. Percent positivity rates are lauded by both the CDC and our UCSD experts as worthwhile to follow. They have been generally low in San Diego County, where it is more typical for high community case rates to be the driving force leading us into the most severe tiers.

I recommend that if asymptomatic positivity rates in any of our schools are high over time, that we respond with strict review and reinforcement of all mitigation measures at that school site, and that the testing cadence and/or testing participation rates increase at that site.

CDC, CDPH and UCSD Expert panel input is based on a body of literature that did not exist when experts weighed in last August. Many are mathematical modeling studies. Some are observational studies, none of which were done when a more easily transmissible variant of the virus was prevalent. Further research is being conducted, and science-based recommendations may need to change, as more evidence becomes available under different school and virus conditions.

**3. Vaccination.**

All panelists felt vaccination of school staff should be a priority. Although none felt it was a condition of reopening, one panelist felt it should be received by staff working with children at high risk for severe disease or who themselves (or a household member) had high risk of severe disease. One felt that if 50% of all teachers were immunized and it was available to all others, schools could open completely. Vaccination of staff will help maintain a stable workforce, one said. One expert noted that vaccination of staff, and not students, could still help to reduce transmission among students, especially in secondary schools. One expert raised the importance of vaccination in the context of the expansion of new variants such as B.1.1.7, and "our ability to maintain low transmission and prevent disease among those at highest risk".

Although both doses in a two-shot series is optimal, most felt that two weeks after the first dose may provide significant protection (and some data were provided to back that up). Staff members with underlying conditions (or with household members with underlying conditions) that put them at higher risk for severe Covid-19 outcomes should wait for two weeks after the second dose in a two-dose series vaccination. The Johnson and Johnson one-dose vaccine was pointed out as especially applicable to educators.

Once vaccinated, staff should still be encouraged to participate in any school asymptomatic testing programs (until we learn differently of the virus transmission potential among those vaccinated) and to abide by virus transmission mitigation measures, such as masking.

**3. Vaccination. Taras's comments/recommendations:**

I agree with the recommendation of both the CDC and the majority of the UCSD expert panel: Although having vaccine offered to all school staff is desirable, it is not essential for their safety or that of students because so many other infection control measures have proven in scientific studies to keep staff members protected from school-based transmitted Covid-19 infections.

Infection control precautions (e.g., distancing, ventilation precautions, full masking indoors) must be pursued with equal diligence before and after vaccination (and likely until there is herd immunity in our community, as defined by public health authorities).

#### **4. Infection Control Measures.**

The expert panel unanimously did not recommend relaxation of any virus transmission mitigation efforts that were encouraged in August. Measurably excellent ventilation (fresh air circulation, filtration, etc), strict adherence to masking, physical distancing, symptom screening, handwashing, and cleaning/disinfecting are important. Although one expert felt barriers were useless to protect against aerosolized virus which hovers in the air, the expert in aerosol dynamics pointed out that barriers were useful when closer than 6 feet to block larger droplets such as from coughs and sneezes – drops that fall to the ground at that distance. Face shields are inadequate themselves and do not replace masks.

##### **4. Infection Control Measures. Taras's comments/recommendations:**

This particular virus is not transmitted via objects and so there is more danger from the potentially toxic effects of disinfectants. The CDPH and our experts agree that between students use of the same desk, cleaning (not disinfecting) is adequate. Barriers are not necessary when students are further than 6 feet. District resources need to focus on near-universal masking, the integrity and fit of those masks, measurably effective ventilation, strict adherence to our rules surrounding eating and transportation, and frequent monitoring of schools (internally or externally) for breaches of protocol and non-punitive responses when there are breaches (i.e., re-education and/or structural changes that make it easier to follow the protocols). Self-report by staff and older students, and parent report for young students (complemented by keen eyes for symptoms by staff members in their midst) can form the backbone of daily temperature and symptoms screening. Continue to keep community members off of campuses, unless there are essential functions for them (testers and vaccinators, for example). Students and staff who develop symptoms must separate from others, and neither should come to school campuses for testing. (Symptomatic testing can occur at physicians' offices, county testing sites, etc).

#### **5. The U.K. Variant – and School Reopening / Remaining Open.**

It was acknowledged that variants (such as B.1.1.7; aka 'the UK Variant') of the Covid-19 virus can be more easily transmitted. We should expect variants like these to emerge, especially if vaccine-induced herd immunity is delayed. None felt this was a reason to not pursue plans, as stated above. A virus that is more transmissible in the community at large will also be more easily transmitted in school, infection control measures that schools are adopting are also protective against the transmission of these variants. Two experts recommended increasing asymptomatic school testing when/if the more transmissible variants become prevalent and community case rates rise. The aerosol expert recommended regular monitoring of ventilation (using carbon dioxide sensors and particle counters) to maintain safety of students and staff.

##### **5. Emerging Variants. Taras's comments/recommendations:**

Emerging variants that may be more easily transmitted only highlight the importance of monitoring case rates in our community and positivity rates in our schools, with the reaction being tightening adherence to mitigation efforts and case tracing, and to increasing testing cadence or participation rates when there is an upwards trajectory, as described above.

It should be recognized that if case rates climb precipitously (e.g, because of an more infectious variant) and vigorous testing and other mitigation measures are applied to keep school-site attendees safe, this does not necessarily mean that schools can operate as usual, even though school-based transmissions remain low. In this scenario, larger numbers of school staff and students will be isolated (because they test virus-positive from non-school transmission) or quarantined (because of close contact with community and family members), diminishing the population of the onsite school community.

## 6. Management of Situations where Individuals Cannot Wear Masks.

Expert panel members felt that those who cannot wear masks posed a potential risk to others. One felt they should not be in school during this national emergency until they are vaccinated. Another feels they should only be educated in outdoor setting with assiduous protection of staff working closely with unmasked students (e.g., personal protective equipment; vaccination).

### **6. Reopening criteria. Taras's comments/recommendations:**

The UCSD experts have confirmed the seriousness of situations where individuals cannot wear masks that fit well around their faces. But I also recognize that it is essential that students with special needs access their education. This is one area where district resources (e.g., outdoor educational facilities, PPE, related equipment; staffing) will be worthwhile investments. Individualized assessments by district health and special education staff need to occur to: (a) confirm the requirement for an individual cannot be optimally masked, and (b) individualize solutions that protect accessibility to one's education and the safety of others. Outdoor teaching, avoiding more than one unmasked person per indoor space, enhanced distancing and ventilation, and other such strategies will need to be employed.

Appendix A: Questions for expert panel

Appendix B: Answers from expert panel

Appendix C: Scientific Literature review